

### **REMARKS**

#### **Amendments to the Claims**

Claims 1, 5, 7-27, 29-33 and 35-42 were pending.

Claims 25, 36-39, 41 and 42 have been newly withdrawn in the Supplemental Restriction Requirement dated October 22, 2010.

Claims 1, 7, 35 and 40 are being amended herewith. Specifically, Claim 1 is being amended to recite "...a first monomer and a second monomer genetically fused together or chemically fused together by a covalent linkage" Support for this amendment can be found in the Specification, for example, at page 8, lines 25-26; and page 19, lines 18-27.

Claim 7 is being amended to recite "genetically fused." Support for this amendment can be found in the Specification, for example, at page 8, lines 25-26; and page 19, lines 18-27.

Claims 35 and 40 are being amended to correct obvious typographical errors.

No new matter has been added. Entry of these amendments is respectfully requested.

#### **Reply to the Supplemental Restriction Requirement**

Applicants hereby traverse the Supplemental Restriction Requirement dated October 22, 2010 for the same reasons set forth in the previous Reply to Restriction Requirement dated August 13, 2010. In the Reply to the Restriction Requirement filed on August 13, 2010, Applicants elected, with traverse, *Escherichia coli* (*E. coli*) PurE as a first oligomer assembly (Claims 35-42), *E. coli* dps as a second oligomer assembly (Claims 35-39), and human ferritin heavy chain as a third oligomer assembly (Claims 40-42) in response to the Restriction Requirement of May 13, 2010 and set forth the reasons why the requirement was improper. However, the Supplemental Restriction Requirement dated October 22, 2010 have identified dihedral, cyclic, tetrahedral and octahedral point groups as species (*see* Office Action at page 4) and Claims 1, 5, 7-24, 35 and 40 as generic, where Claims 25-27, 29-33, 36-39, 41 and 42 were indicated as withdrawn. The Supplemental Restriction Requirement is inconsistent and improper for at least the reasons set forth below.

The Supplemental Restriction Requirement is inconsistent and improper because if Applicants were to elect the tetrahedral point group as the species in response to the Supplemental Restriction Requirement of October 22, 2010, Claims 37 and 38 should not be

withdrawn because the tetrahedral point group includes *E. coli* dps and Claims 37 and 38 are directed to *E. coli* dps (see the Specification at page 16, line 31 through page 17, line 1). Similarly, if Applicants were to elect the octahedral point group, Claim 36 should not be withdrawn because human ferritin heavy chain belongs to the octahedral point group and Claim 36 is directed to human ferritin heavy chain (see the Specification at page 11, lines 29-31). The Supplemental Restriction Requirement, however, identified the dihedral, cyclic, tetrahedral and octahedral point groups as the species for election, while indicating Claims 36-39, 41 and 42 as withdrawn. As such, the Restriction Requirement dated May 13, 2010 and the Supplemental Restriction Requirement dated October 22, 2010 are improperly based on misinterpretation of the claimed invention.

While Applicants maintain the arguments set forth in the previous Reply to Restriction Requirement submitted on August 13, 2010, to expedite prosecution, Applicants have amended Claim 1 to recite “genetically fused together or chemically fused together by a covalent linkage” to better clarify the present invention. Applicants note that the instant Specification unequivocally provides two alternative options for the covalent fusion between two monomers: (1) genetic in-frame fusion; or (2) chemical fusion by means of a covalent linkage (see the Specification, for example, at page 8, lines 25-26; and page 19, lines 18-27).

Claims 1, 5, 7-24 and 35-40 share a special technical feature that defines a contribution over the prior art and provides a unity of the invention. First, Applicants respectfully request the statement in the Office Action be corrected. Applicants cited, not admitted, the exact teachings of Grant *et al.* (“the packing resembles multiple layers of dodecamers in two-dimensional sheets one dodecamer thick”; emphasis added). Further, as taught by Grant *et al.*, the crystal packing merely resembles multiple layers of two-dimensional sheets of dodecamers and such a packing does not constitute a regular structure with a repeating unit repeating in three dimensions as set forth in Claim 1, as amended. Because the layers described in Grant *et al.* are merely “packed” on top of each other, the interactions between the two layers of dodecamers do not constitute “genetic fusion or chemical fusion by means of a covalent linkage.” Nor are monomers of two oligomer assemblies in Grant *et al.* fused together in such a way that they are genetically or chemically fused with each other by a covalent linkage. This is because the structure is created by the crystal contacts, not by the covalent fusion as explained in the Reply to Restriction

Requirement dated August 13, 2010, page 3, second full paragraph. Therefore, for at least the foregoing reasons, the teachings of Grant *et al.* lack fundamental features of the present invention and do not fall within the scope of Claim 1, as amended.

Applicants request that the Restriction Requirement be withdrawn and Claims 36-39, 41 and 42 be reinstated for examination.

### CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are ready for examination. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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